Notice of Allowability	Application No.	Applicant(s)	
	09/849,662	PADMANABHAN ET AL.	
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *05/09/2007*.

2. ☒ The allowed claim(s) is/are *1-41*.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. Claims 1-41 are allowed.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Nilesh Amin on 05/31/2007.

3. The application has been amended as follows:

A. In the claims:

a. Claim 1. (currently amended) A computer implemented method of determining the location of an Internet host using a computer system, comprising the following computer executable acts:

obtaining route information relating to ~~a~~ one or more network paths between a host IP address associated with the Internet host and the computer system, wherein the network paths comprises the computer system, the Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node;

extracting ~~a~~ one or more location codes from the route information corresponding to a router label associated with one of the Internet host and ~~an~~ one or more intermediate network nodes proximate the Internet host;

consulting a data store comprising at least one data set having location codes and corresponding location information;

obtaining location information from the data store corresponding to the one or more location codes associated with the one of the Internet host and the one or more intermediate network nodes proximate the Internet host;

providing a location estimate of the location of the Internet host according to the location information from the data store corresponding to the location code;

determining a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively providing the location estimate ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along the network path~~; and

selectively correcting the location estimate according to the dispersion metric ~~delay time associated with the network path~~.

b. Claim 7. (Currently Amended) A software tool stored on a computer readable storage medium for determining the location of an Internet host using a computer system, comprising the following computer executable components:

a route trace component that obtains route information relating to a one or more network paths between a host IP address associated with the Internet host and the computer system, wherein ~~the~~ first network paths comprises the computer system, the

Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node;

an extraction component that extracts ~~a~~ one or more location codes from the route information corresponding to ~~a~~ one or more router labels associated with one of the Internet host and ~~an~~ the at least one intermediate network node proximate the Internet host;

a data store comprising at least one data set having location codes and corresponding location information;

an estimation component that obtains location information from the data store corresponding to the location codes associated with the one of the Internet host and the at least one intermediate network node proximate the Internet host, and to provide a location estimate of the location of the Internet host according to the location information from the data store corresponding to the location code;

a correction component that determines a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively correcting the location estimate according to the dispersion metric ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along the network path and selectively correct the location estimate according to the delay time associated with the network path~~, wherein the location estimate is at least one of stored on a computer readable storage medium or displayed on an display device.

c. Claim 8. (Currently Amended) A computer-readable medium having computer-executable instructions for:

obtaining route information relating to ~~a~~ one or more network paths between a host IP address associated with an Internet host and a computer system, wherein the network paths comprises the computer system, the Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node;

extracting ~~a~~ one or more location codes from the route information corresponding to a router label associated with one of the Internet host and ~~an~~ one or more intermediate network nodes proximate the Internet host;

consulting a data store comprising at least one data set having location codes and corresponding location information;

obtaining location information from the data store corresponding to the location codes associated with the one of the Internet host and the one or more intermediate network nodes proximate the Internet host;

providing a location estimate of the location of the Internet host according to the location information from the data store corresponding to the location code;

determining a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along the network path~~; and

selectively correcting the location estimate according to the dispersion metric ~~delay time associated with the network path~~.

d. Claim 9. (Currently Amended) A system executing on one or more processors for determining the location of an Internet host, comprising the following computer executable components:

a first component operating in a computer system that obtains route information relating to ~~a~~ one or more network paths between a host IP address associated with the Internet host and the computer system, wherein the ~~first~~ network paths comprises the computer system, the Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node;

a second component operating in the computer system that extracts ~~a~~ one or more location codes from the route information corresponding to a router label associated with one of the Internet host and ~~an~~ one or more intermediate network nodes proximate the Internet host;

a third component operating in the computer system that consults a data store comprising at least one data set having location codes and corresponding location information;

a fourth component operating in the computer system to obtain location information from the data store corresponding to the location codes associated with the one of the Internet host and the one or more intermediate network nodes proximate the Internet host;

a fifth component operating in the computer system that determines ~~provides~~ a location estimate of the location of the Internet host according to the location information from the data store corresponding to the location code; and

a sixth component operating in the computer system that determines a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along the network path~~ and selectively provide ~~correct~~ the location estimate according to the delay time associated with the network path.

e. Claim 10. (Currently Amended) Geographical location estimate data associated with an Internet host, the estimate data resulting from a process executing on a computer system, comprising the following computer executable acts:

obtaining route information relating to ~~a~~ one or more network path~~s~~ between a host IP address associated with the Internet host and a computer system, wherein the network path~~s~~ comprise~~s~~ the computer system, the Internet host, and at least one intermediate network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and the at least one intermediate network node;

extracting ~~a~~ one or more location code~~s~~ from the route information corresponding to a router label associated with one of the Internet host and ~~an~~ one or more intermediate network node~~s~~ proximate the Internet host;

consulting a data store comprising at least one data set having location codes and corresponding location information;

obtaining location information from the data store corresponding to the one or more location codes associated with the one of the Internet host and the one or more intermediate network nodes proximate the Internet host; and

providing a location estimate of the location of the Internet host according to the location information from the data store corresponding to the location code;

determining a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along the network path~~; and

selectively correcting the location estimate according to the dispersion metric ~~delay time associated with the network path~~, wherein the location estimate is at least one of stored on a computer readable storage medium or displayed on an display device.

f. Claim 11. (Currently Amended) A computer implemented method of determining the location of an Internet host using multiple computer systems, comprising the following computer executable acts:

obtaining route information relating to a plurality of network paths between a host IP address associated with the Internet host and a corresponding plurality of computer systems, respectively, wherein the plurality of network paths individually comprise a corresponding computer system, the Internet host, and at least one intermediate

network node, and wherein the route information comprises a plurality of router labels associated with the host IP address and an intermediate network node;

extracting ~~a~~ one or more location codes from the route information corresponding to a router label associated with one of the Internet host and ~~an~~ one or more intermediate network nodes proximate the Internet host;

consulting a data store comprising at least one data set having location codes and corresponding location information;

obtaining location information from the data store corresponding to the one or more location codes associated with the one of the Internet host and the one or more intermediate network nodes proximate the Internet host;

providing a location estimate of the location of the Internet host according to the location information.

determining a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host ~~delay time associated with a transmission from the computer system to receipt of the transmission at the Internet host along at least one of the network paths~~; and

selectively correcting the location estimate according to the dispersion metric ~~delay time~~.

g. Claim 27. (Currently amended) A method of determining the location of an Internet host using a first computer system, comprising the following computer executable acts:

obtaining partial IP-to-location mapping information from a data source; obtaining network routing information;

clustering together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information;

correlating the partial IP-to-location information with the cluster information;

providing a location estimate of the location of the Internet host according to the correlation of the partial IP-to-location information and the cluster information; and

computing a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively providing the location estimate based upon the dispersion metric.

g. Claim 39. (Currently amended) A computer-readable medium having computer-executable instructions for:

obtaining partial IP-to-location mapping information from a data source; obtaining network routing information;

clustering together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information;

correlating the partial IP-to-location information with the cluster information;

providing a location estimate of the location of the Internet host according to the correlation of the partial IP-to-location information and the cluster information; and

calculating a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively providing the location estimate based upon the dispersion metric.

h. Claim 40. (Currently Amended) A system executing on one or more processors for determining the location of an Internet host, comprising the following computer executable components:

a first component that obtains partial IP-to-location mapping information from a data source;

a second component that obtains network routing information;

a third component that clusters together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information;

a fourth component operating that correlates the partial IP-to-location information with the cluster information;

a fifth component that provides a location estimate of the location of the Internet host according to the correlation of the partial IP-to-location information and the cluster information; and

a sixth component operating to that calculates a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively providing the location estimate based upon the dispersion metric.

i. Claim 41. (Currently Amended) Geographical location estimate data associated with an Internet host, the estimate data resulting from a process executing on a computer system, comprising the following computer executable acts:

obtaining partial IP-to-location mapping information from a data source;

obtaining network routing information;

clustering together IP addresses corresponding to hosts in the same geographic location according to network routing information to obtain cluster information;

correlating the partial IP-to-location information with the cluster information; providing a location estimate of the location of the Internet host according to the correlation of the partial IP-to-location information and the cluster information; and computing a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host and selectively providing the location estimate based upon the dispersion metric, wherein the location estimate is at least one of stored on a computer readable storage medium or displayed on an display device.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

Applicant's arguments that neither Anderson nor Ahuja teach determining a dispersion metric representative of the accuracy of the location estimate of the location of the Internet host; and selectively correcting the location estimate according to the dispersion metric along with the context provided by other respective claim limitations. . None of the prior arts of record teach or suggest the claimed limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached o If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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